Avid® Nitris™ DNA

Setup Guide

for the HP® Workstation xw8000 System

on Windows® XP

make manage move | media™ Avid®

Copyright and Disclaimer

Product specifications are subject to change without notice and do not represent a commitment on the part of Avid Technology, Inc. The software described in this document is furnished under a license agreement. You can obtain a copy of that license by visiting Avid's Web site at www.avid.com. The terms of that license are also available in the product in the same directory as the software. The software may not be reverse assembled and may be used or copied only in accordance with the terms of the license agreement. It is against the law to copy the software on any medium except as specifically allowed in the license agreement.

No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose without the express written permission of Avid Technology, Inc.

Copyright © 2003 Avid Technology, Inc. and its licensors. All rights reserved.

The Avid DS and Avid DS Nitris application uses JScript and Visual Basic Scripting Edition from Microsoft Corporation.

Attn. Government User(s). Restricted Rights Legend

U.S. GOVERNMENT RESTRICTED RIGHTS. This Software and its documentation are “commercial computer software” or “commercial computer software documentation.” In the event that such Software or documentation is acquired by or on behalf of a unit or agency of the U.S. Government, all rights with respect to this Software and documentation are subject to the terms of the License Agreement, pursuant to FAR §12.212(a) and/or DFARS §227.7202-1(a), as applicable.

Trademarks

888 I/O, Adrenaline, AirPlay, AirSPACE, AirSPACE HD, AniMatte, AudioSuite, AudioVision, AutoSync, Avid, Avid DNA, AVIDdrive, AVIDdrive Towers, AvidNet, AvidNetwork, AVIDstripe, Avid Mojo, Avid Unity, Avid Xpress, AVoption, AVX, CamCutter, ChromaCurve, ChromaWheel, DAE, D-Fi, D-fx, Digidesign, Digidesign Audio Engine, Digidesign Intelligent Noise Reduction, DigiDrive, Digital Nonlinear Accelerator, DigiTranslator, DINR, D-Verb, Equinox, ExpertRender, FieldPak, Film Composer, FilmScribe, FluidMotion, HIIP, HyperSPACE, HyperSPACE HDCAM, IllusionFX, Image Independence, Intraframe, iS9, iS18, iS23, iS36, Lo-Fi, Magic Mask, make manage move | media, Marquee, Matador, Maxim, MCXpress, Media Composer, MediaDock, MediaDock Shuttle, Media Fusion, Media Illusion, MediaLog, Media Reader, Media Recorder, MEDIArray, MediaShare, Meridien, MetaSync, NaturalMatch, Nearchive, NetReview, NewsCutter, Nitris, OMF, OMF Interchange, OMM, Open Media Framework, Open Media Management, ProEncode, Pro Tools, QuietDrive, Recti-Fi, RetroLoop, rS9, rS18, Sci-Fi, Softimage, Sound Designer II, SPACE, SPACEShift, Symphony, the Avid|DS logo, Trilligent, UnityRAID, Vari-Fi, Video Slave Driver, VideoSPACE, Xdeck, and XSI are either registered trademarks or trademarks of Avid Technology, Inc. in the United States and/or other countries.

Adaptec is a trademark which may be registered in some jurisdictions. ATTO is a trademark of ATTO Technology, Inc. FIRE GL is a trademark of ATI Technologies, Inc. HP is a registered trademark of Hewlett-Packard Company. Mac OS is a trademark of Apple Computer, Inc., registered in the U.S. and other countries. OpenGL is a registered trademark of Silicon Graphics, Inc. UNIX is a registered trademark of The Open Group in the U.S. and other countries. Wacom is a registered trademark of Wacom Company, Ltd. in the United States and/or other countries. Windows is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries. All other trademarks contained herein are the property of their respective owners.

GOT FOOTAGE?

Editors — Filmmakers — Special Effects Artists — Game Developers — Animators — Educators — Broadcasters — **Content creators of every genre** — Just finished an incredible project and want to share it with the world?

Send us your reels and we may use your footage in our show reel or demo!*

For a copy of our release and Avid’s mailing address, go to www.avid.com/footage.

*Note: Avid cannot guarantee the use of materials submitted.

Avid Nitris DNA Setup Guide for the HP Workstation xw8000 System on Windows XP • 0130-05571-01 • September 2003

Contents

Using This Guide 9

Who Should Use This Guide 9
Symbols and Conventions 11
Using the Mouse, Pen, and Keyboard 12
Customizing the Pen or Mouse 13
If You Need Help 13
Accessing the Online Documentation 13
If You Have Documentation Comments 14
How to Order Documentation 14
Avid Educational Services 14
Avid DS Customer Support 15
E-mail Support 15
Web Support 15
FTP Support 15
Mailing List 16

Chapter 1 **Avid DS Overview and Site Preparation** 17

Package Contents 17
Hardware 17
Software 18
Documentation 19
Site Planning 21
Environmental Requirements 21
Electrical Requirements 22
Space Requirements 23
Additional Equipment 25

Chapter 2 **Avid DS Hardware Overview** 27

Back Panel Overview 28
Workstation Boards 29

Port Locations 31
Disk Subsystem 32
System Inputs and Outputs 33
Signal Flow 34
Capture Mode 34
Playback Mode 34
House Sync 35
Tri-level Sync 35
Sync Topology 36
Installing and Removing the Avid Fan 37

Chapter 3 **Assembling the System** 39

Before Assembling the System 40
Connecting the Keyboard, Mouse, and Graphic Tablet 41
Connecting the Monitors 42
Connecting the Avid Nitris DNA 43
Avid Nitris DNA Front Panel 43
Nitris DNA Rear Panel 44
Connecting the SCSI Local Storage Systems 52
Avid MediaDock LVD 52
Avid MediaDock Ultra320 54
Connecting the Fibre Channel Local Storage 55
Avid Unity MediaNetwork 56
Connecting the Machine Control Cable 56
Connecting the USB-to-MIDI Converter 57
Connecting Peripheral Devices 58
Video Connections 58
Audio Connections 59
Connecting the Application Key (Dongle) 61

Chapter 4 **Rack Mounting the Avid Nitris DNA Enclosure** 63

Equipment Environmental and Safety Guidelines 64
Installing the Avid Nitris DNA in a Rack 64
Attaching the Rack Nuts to the Rack 65
Securing the Avid Nitris DNA in a Rack 66

Appendix A **Regulatory and Safety Notices** 69
Warnings and Cautions 69
FCC Notice 70
Canadian ICES-003 70
European Union Notice 71
Australia and New Zealand EMC Regulations 73
Taiwan EMC Regulations 74

Index 75

Figures

Figure 1 Avid DS System Configuration 23
Figure 2 Back Panel Overview 28
Figure 3 Avid Nitris Base Board Connections. 30
Figure 4 ATTO Fibre Channel Connection 31
Figure 5 Mouse, Keyboard, and Application Key Connections. . . . 31
Figure 6 Placing the Fan Into the System 37
Figure 7 Lowering Fan Into Place. 38
Figure 8 Plugging the Fan 38
Figure 9 Connecting the Keyboard, Mouse, and Wacom Tablet . . 41
Figure 10 ATI FIRE GL X1 Board Slot Location 42
Figure 11 Avid Nitris DNA Front Panel 43
Figure 12 Nitris DNA Rear Panel 45
Figure 13 Connecting the Avid Nitris DNA 46
Figure 14 HD Video I/O Board Connectors 47
Figure 15 Eight-Channel Audio I/O Board Connectors. 48
Figure 16 SD Video I/O Board Connectors 49
Figure 17 SCSI Connections at the Rear of the System 52
Figure 18 ATTO 3300 Fibre Channel Board Slot Location. 55
Figure 19 dataMate Adapter. 56
Figure 20 USB-to-MIDI Converter 57
Figure 21 Connecting Video Devices 59
Figure 22 Audio Input and Output Cable 60
Figure 23 Audio Input and Output Connections 60
Figure 24 Audio Monitoring Connection 61
Figure 25 Parallel Port Location 62
Figure 26 Positioning the Avid Nitris DNA 65
Figure 27 Attaching Rack Nuts onto the Rack Enclosure. 66
Figure 28 Installing an Avid Nitris DNA. 67

Tables

Table 1	System Hardware	18
Table 2	Avid DS Documentation	19
Table 3	Electrical Specifications	22
Table 4	Hardware Component Dimensions	24
Table 5	Additional Equipment	25
Table 6	HP Workstation xw8000 Slot Configurations	29
Table 7	Disk Drive Information	32
Table 8	System Inputs and Outputs	33
Table 9	HD Formats	35
Table 10	Avid Nitris DNA LEDs	43
Table 11	HD Video I/O Board Identifiers	47
Table 12	Eight-Channel Audio I/O Board Identifiers	48
Table 13	SD Video I/O Board Identifiers	50

Using This Guide

Congratulations on your purchase of an Avid® DS system. You can use your system to create broadcast-quality output incorporating every possible production element from full-speed, high-resolution footage to multimedia artwork and animation, to computer-generated effects and titling.

The documentation describes the features and hardware of all models. Therefore, your system might not contain certain features and hardware that are covered in the documentation.

Who Should Use This Guide

This guide is intended for anyone who is setting up an Avid DS Nitris system for the first time, for anyone who might be moving a system, and for anyone who might be attempting to solve problems that can arise with the system hardware. This guide is *not* designed for someone who is installing board sets in the system.

The information provided in this guide will help you to understand the components that are part of a system, to connect the components for proper system functionality, to configure and test the system after installation, and to troubleshoot basic problems that can arise during daily operation.

The Contents that precedes this section lists the topics included in the guide. They are presented with the following overall structure:

- Chapter 1, “Avid DS Overview and Site Preparation,” provides an overview of the Avid Nitris DNA hardware, software, and documentation included with your Avid DS Nitris workstation and the information you need to prepare your site for the Avid Nitris DNA system.
- Chapter 2, “Avid DS Hardware Overview,” provides an overview of the Avid Nitris DNA hardware included with your Avid DS Nitris workstation.
- Chapter 3, “Assembling the System,” provides the instructions you need to assemble the Avid DS system.
- Chapter 4, “Rack Mounting the Avid Nitris DNA Enclosure,” provides the instructions for installing the Avid Nitris DNA enclosure in an industry-standard rack.
- Appendix A, “Regulatory and Safety Notices,” provides regulatory and safety notices for the system.

An Index at the end of this guide helps you locate the information you need.

Symbols and Conventions

Unless noted otherwise, the material in this document applies to the Windows XP operating system. Avid DS Nitris documentation uses the following symbols and conventions:

Symbol or Convention	Meaning or Action
	A note provides important related information, reminders, recommendations, and strong suggestions.
	A caution means that a specific action you take could cause harm to your computer or cause you to lose data.
	A warning describes an action that could cause you physical harm. Follow the guidelines in this document or on the unit itself when handling electrical equipment.
>	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means to open the File menu and then select the Import command.
▶	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
Margin tips	In the margin, you will find tips that help you perform tasks more easily and efficiently.
Italic font	Italic font is used to emphasize certain words and to indicate variables.
`Courier Bold font`	Courier Bold font identifies text that you type.
Bold font	Bold indicates a user interaction.

Using the Mouse, Pen, and Keyboard

In Avid DS Nitris, you can use a two-button mouse (with wheel) or a pen and tablet. The left and right mouse buttons perform different operations. Unless otherwise stated, use the left mouse button.

The mouse and pen operate slightly differently. All the procedures in this guide are documented for the mouse. You can, however, easily use a pen or the keyboard. The following table shows the terms relating to the mouse, pen, and keyboard.

This Term	Means This with a Mouse	Means This with a Pen
Click	Quickly click and release the left mouse button. Always use the left mouse button unless otherwise stated.	Tap the tablet once with the tip of the pen, or touch the pen to the tablet with enough pressure to click.
Double-click	Click the left mouse button twice rapidly.	Quickly tap the tablet twice in the same screen pixel or press the F5 key to go from single to double-click.
Right-click	Quickly click and release the right mouse button.	Press the top portion of the switch on the side of the pen or press the F6 key to go from left to right-click.
Drag	Click and hold the left mouse button or the wheel while you move the mouse.	Press the pen to the tablet while moving the pen.
Alt+*key,* Ctrl+*key,* Shift+*key, etc.*	Press and hold the first key while you press the second key. For example, “Press Alt+F1” means to press and hold the Alt key while you press the F1 key.	

Customizing the Pen or Mouse

By customizing the pen, you can adjust the click pressure, switch functions, and other features. For information on customizing the pen, refer to the documentation provided with your Avid DS Nitris system.

You can also customize the mouse. For example, you can select left-handed configuration or change the double-click speed. For information on customizing the mouse, refer to the Windows online Help.

If You Need Help

If you are having trouble using Avid DS Nitris:

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.
2. Check for the latest information that might have become available *after* the documentation was published in one of two locations:
   - If release notes are available, they ship with your application.
   - If ReadMe files are available, they are supplied in your Avid application folder. ReadMe files are also available from Help.
3. Check the documentation that came with your Avid application or your hardware for maintenance or hardware-related issues.
4. See "Avid DS Customer Support" on page 15.
5. For Technical Support, please call 800-800-AVID (800-800-2843).

Accessing the Online Documentation

The online library contains all the Avid DS Nitris documentation in PDF format. If it was installed on your workstation, you can access it from the Help menu in Avid DS Nitris.

You will need Adobe® Acrobat® Reader® installed to view the documentation online.

To access the online library, do one of the following:

- In Avid DS Nitris, select **Help** > **Online Library**.
- Insert the Drivers CD into your CD-ROM drive, and select **Online Library** from the main menu.

To install Adobe Acrobat Reader:

1. Insert the Drivers CD into your CD-ROM drive.
2. Select the required workstation and choose **Utilities**.

If You Have Documentation Comments

We'd appreciate any comments or suggestions you may have about the Avid DS Nitris documentation.

Please e-mail your documentation comments to:

dsdocs@avid.com

Include the title of the document, its part number, and the specific section you are commenting on in all correspondence.

How to Order Documentation

To order additional copies of this documentation from within the United States, call Avid Sales at 800-949-AVID (800-949-2843). If you are placing an order from outside the United States, contact your local Avid representative.

Avid Educational Services

For information on courses/schedules, training centers, certifications, courseware, and books, please visit www.avid.com/training or call Avid Sales at 800-949-AVID (800-949-2843).

Avid DS Customer Support

The following sections describe various Avid DS Customer Support options.

E-mail Support

The e-mail address for Avid DS Customer Support is: **dssupport@avid.com**.

You can use it for sending bug reports, usability questions, and avidds.cab audit reports for system analysis. All e-mails are logged in the support database and assigned a case number. Send one support request per e-mail.

It is mandatory that you include your SID number in the body of your e-mail message for verification of your maintenance contract and case logging, otherwise, response will be delayed.

Web Support

The Avid DS Customer Support and Download sections at **http://www.softimage.com/avidds** provide quick access to a wide range of resources from the Avid DS teams and user community. Downloads, including presets, drivers, and Quick Fix Engineering (QFE), provide the latest solutions for use with your Avid DS Nitris system. Online documentation, tutorials, and Knowledge Base articles ensure that you get the most out of your work with Avid DS Nitris. It's like having a dedicated Avid DS Customer Support engineer sitting at your desk!

FTP Support

For troubleshooting purposes, an FTP server is available for uploading large files for Avid DS Customer Support personnel to examine. You can upload a project's archive, media files, or other large piece of data. Simply zip the files to upload and use a short name for easy retrieval, such as archive.zip or Case274877.zip. You can use a Windows Command Prompt or an FTP application to upload files to our server.

Command Prompt Commands

Command	Description
Site access	ftp ftp.softimage.com [Enter]
Folder access	cd incoming [Enter]
User name	anonymous [Enter]
Password	“your e-mail address” [Enter]
Transfer mode	bin [Enter]
Upload command	Put “path:\file name” [Enter]

Once the file upload is complete, send an e-mail to **dssupport@avid.com** to inform Avid DS Customer Support as there is no automatic notification when a file is uploaded on the FTP server. Please provide the complete and exact file name (case sensitive) to retrieve.

Mailing List

Although the Avid DS mailing list is frequently monitored by Avid employees, it is not part of the official support channels. You are invited to send your support requests to any of the above channels when required.

If you have an e-mail account, you can join the worldwide network of Avid DS users exchanging ideas. The mailing list has proven to be quite useful for users, with a constant stream of new subscribers.

To subscribe, send an e-mail to **majordomo@softimage.com** with the following text in the body of your message: **subscribe ds**. You can get further information on using the automated list server by e-mailing **majordomo@softimage.com** with “help” as your message.

You can also go to **http://www.avid.com/support/forums.html**, which is also a great source of information on the Avid Web site for Avid DS.

Chapter 1

Avid DS Overview and Site Preparation

This chapter provides an overview of the Avid DS hardware, software, and documentation included with your Avid DS for HP Workstation xw8000 system and the information you need to prepare your site for the Avid DS hardware.

This chapter contains the following sections:

- Package Contents
- Site Planning
- Additional Equipment

Package Contents

Your Avid DS system contains hardware, software, and documentation.

Hardware

After carefully unpacking the hardware, verify all of the items on the packing slip before setting up your workstation. Make sure that you write down the serial number of all the devices.

A typical Avid DS system includes the hardware listed in Table 1.

Table 1 System Hardware

Device	Device, cables, and accessories
HP Workstation xw8000	Base unit, keyboard, mouse, two optical cables, power cable, and rackmount kit (optional)
Flat-panel monitors (21-inch monitors from previous Avid DS systems are also supported)	Two 18-inch flat-panel monitors, two monitor cables and two VGA to DVI adapters, and two power cables
Avid MediaDock™ LVD or Avid MediaDock Ultra320 local storage system	MediaDock LVD or MediaDock Ultra320 enclosure with LVD or Ultra320 shuttle drives and power cables
(Option) Avid MEDIArray II™ local storage	Fibre Channel controller board, an Avid MEDIArray II enclosure with a minimum of four Fibre Channel drives for standard definition (SD) or eight drives for high definition (HD) storage, and a power cord
(Option) Avid Unity™ MediaNetwork Fibre Channel storage system	Fibre Channel controller board. Enclosures depend on the Avid Unity MediaNetwork system ordered
Avid Nitris™ Digital Nonlinear Accelerator (DNA)	Avid Nitris DNA, digital interlink cable, three audio harness cables, and a power cable Avid installs two PCI boards in the HP xw8000 system that support the Avid Nitris DNA.
(Option) Wacom® tablet	Tablet, pen and stand, USB cable, and 4D mouse
DataMate RS-232 to RS-422 convertor for deck control	Convertor, an RS-232 cable, and an RS-422 cable

Software

Most of the software that you receive on CD-ROM is also installed on your workstation's hard drive.

Keep the Software, Drivers, and Recovery CD-ROMs in a safe place in case you need to reinstall the software or any of the drivers.

The Avid DS software package contains:

- Avid DS Software CD-ROM
- Avid DS Drivers CD-ROM
- An Avid DS Recovery CD-ROM for the xw8000 system
- Software protection key (dongle)

Your xw8000 system comes with the following software components pre-installed:

- Windows XP Professional and Windows XP Service Pack 1 software
- Avid Nitris DNA software
- Wacom Technology software
- ATI FIRE GL™ X1 software

The documentation for the software components is also shipped with the system.

Documentation

Table 2 describes the complete Avid DS documentation set.

Table 2 Avid DS Documentation

Document	Format	Version	Description
Release Notes	Online/Print	7.0	Describes known problems and provides workarounds. Also describes and includes video presentations of the new features in v7.0 of Avid DS.
Setup Guide (this document)	Online/Print	7.0	Provides an overview of the Avid DS system and describes how to connect the different sections of system.

Table 2 Avid DS Documentation (Continued)

Document	Format	Version	Description
Installation & Administration Guide	Online/Print	7.0	Provides information on installing and upgrading the current version of Avid DS and its components. Also contains workstation administration tasks and troubleshooting information.
Getting Started Guide	Online/Print	7.0	Contains quick step-by-step instructions to help you get started on the basic post-productions tasks.
Compositing & Effects Guide	Online/Print	7.0	Describes the basic types of effects in Avid DS and shows you how to apply them to your media. There's also information on when and how to process effects.
Capture and Output Guide	Online/Print	7.0	Describes the processes of capturing material into the Avid DS system and outputting a finished sequence.
Editing Guide	Online/Print	7.0	Describes the work processes of Avid DS. It shows you how to work with your media and perform basic and advanced editing.
Help	Online	7.0	Contains the complete set of task and reference information on Avid DS.
Reference Guide	Online	7.0	Contains printable reference information on layouts, views, parameters in property editors and dialog boxes, and commands in toolbars and pop-up menus
Keyboard Shortcuts	Online	7.0	Contains all the Avid DS keyboard shortcuts. You can print it and slide it under the cover sheet of your graphic tablet.
Online Library	Online	7.0	The complete set of Avid DS books in Acrobat PDF format with a search index across all books.
Vendor documentation	Print	—	Guides from the vendors of the various hardware and software components that comprise your Avid DS workstation.[a]

a. For details on setting up, handling, and maintaining these components, see the documentation included with each of them.

Site Planning

When preparing your site, you must consider the environmental, electrical, and space requirements for your Avid DS workstation, as well as any additional equipment that you may need to purchase and its requirements.

Environmental Requirements

The site you choose for your Avid DS workstation should meet the following environmental requirements:

- Clean and dust free
- Free from significant temperature or humidity changes
- Sturdy, level, and not subject to vibration
- Away from radio frequency emissions, high-traffic, or high-noise areas
- Provides adequate space in front of and behind the workstation components, so that you can connect cables and service your workstation. This also provides adequate airflow for cooling.
- A minimum clearance of 3 inches (7.6 cm) for the side and back panels of the deskside base unit
- A table (or other surface) that is at least 60 inches wide by 48 inches deep (150 cm × 120 cm) for the editing workstation

Electrical Requirements

Your site should meet the following electrical requirements:

- Adequate power for each workstation component, so that extension cords are not needed.
- At least two 15-amp circuits available: one for the workstation, Nitris DNA, and accessories and one for the Avid MediaDock LVD storage system.
- Site is away from major electrical equipment, such as motors, air conditioners, or elevators.
- Site is not subject to static electrical buildup.
- Uses an uninterruptible power supply (UPS) to protect your workstation from sudden power surges or losses, and to save you from the resulting loss of work.

Plug only your Avid DS equipment into the power strip. Do not plug in coffee makers, radios, lights, or other such devices.

Table 3 describes the electrical specifications for the Avid DS system.

Table 3 Electrical Specifications

Component	Voltage	Frequency
HP Workstation xw8000	100 to 250 V ac auto-ranging	50 to 60 Hz
Monitors	100 to 250 V ac	50 to 60 Hz
Avid Nitris DNA	100 to 240 V ac	50 to 60 Hz
Avid MediaDock LVD and Avid MediaDock Ultra320 storage systems	90 to 264 V ac	50 to 60 Hz
Avid MEDIArray Fibre Channel storage (included with SD version of Avid DS only)	100 to 240 V ac	50 to 70 Hz
Wacom tablet	120 V ac (North America) 220 V ac (International)	60 Hz

Space Requirements

Your workstation includes either a tower or rackmount base unit, the video storage array, and two flat-panel monitors. You can place the workstation base unit and the video storage enclosure next to your work area or in a rack as shown in Figure 1.

You can also monitors from previous Avid DS systems.

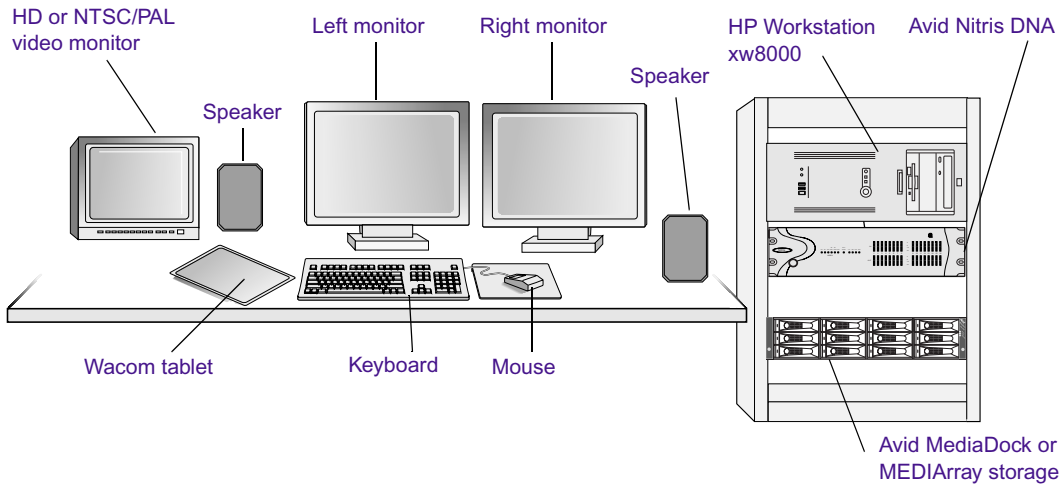


Figure 1 Avid DS System Configuration

The speakers and video monitor are purchased separately. The video monitor and the computer monitors should be placed at least 12 inches (30 cm) apart. Placing them closer together may cause synchronization interference on the computer monitors.

If you purchase the optional rackmount kit for the base unit, it mounts in a standard 19-inch (48.26 cm) equipment rack. The Avid Nitris DNA, MEDIArray, and MediaDock LVD storage system can also be mounted in the same or another equipment rack. For information on mounting the Avid Nitris DNA, see Chapter 4.

Table 4 lists the dimensions of the major hardware components.

Table 4 Hardware Component Dimensions

Hardware component	Dimensions (Inches)	Dimensions (Centimeters)
HP Workstation xw8000 Rackmount configuration — Rack Units: 5	Height: 17.7 Depth: 20.3 Width: 8.3	Height: 44.9 Depth: 51.5 Width: 21.0
18-inch flat-panel monitors (with stand)	Height: 15.9 Width: 15.7 Depth: 7.9	Height: 40.3 Width: 39.8 Depth: 7.4
Avid Nitris DNA Rackmount configuration — Rack Units: 3	Height: 5.3 Width: 17.6 Depth: 13	Height: 13.5 Width: 44.7 Depth: 33.02
Avid MediaDock Ultra320 Tower configuration (SD and HD version of Avid DS only)	Height: 21.5 Width: 10.5 Depth: 21.5	Height: 54.6 Width: 26.7 Depth: 54.6
Avid MediaDock Ultra320 Rackmount configuration — Rack Units: 2 (SD and HD version of Avid DS only)	Height: 3.5 Width: 17.6 Depth: 20.3	Height: 89 Width: 44.7 Depth: 51.5
Avid MediaDock LVD Tower configuration	Height: 18.8 Width: 10.5 Depth: 17.6	Height: 47.7 Width: 26.7 Depth: 44.7
Avid MediaDock LVD Rackmount configuration — Rack Units: 2	Height: 5.3 Width: 17.6 Depth: 17.4	Height: 13.5 Width: 44.7 Depth: 44.2
Avid MEDIArray Tower configuration (SD version of Avid DS only)	Height: 26.8 Width: 9.8 Depth: 29.4	Height: 68.0 Width: 24.9 Depth: 74.7
Avid MEDIArray Rackmount configuration — Rack Units: 3 (SD version of Avid DS only)	Height: 6.1 Width: 17.5 Depth: 24.0	Height: 15.45 Width: 44.5 Depth: 60.9
Wacom tablet	Width: 9.0 Depth: 12.0	Width: 22.9 Depth: 30.5

Additional Equipment

Table 5 lists he additional peripherals and cables required for a typical Avid DS workstation.

Table 5 Additional Equipment

Device	Description
House sync generator	The house sync must have the same video format as your video equipment, as well as the project that you create in Avid DS. You will need a tri-level sync generator for HD projects.
Video monitor	HD or NTSC/PAL
HD video cable	Use high-quality video cable certified for HDTV.
Videotape recorder (VTR)	VTRs connect to the base unit through an RS-422 cable and RS-232 signal converter. For a list of approved HD VTRs, contact your Avid DS reseller.
Video distribution amplifier	Distributes the house sync signal between separate devices including the Avid Nitris DNA equipment.
Digital waveform monitor	Measures the luminance and chrominance video signals
Speakers and amplifier	Analog and/or digital audio equipment and converters for converting audio signals
USB-MIDI	The USB port provides control of external controllers, such as the JL Cooper MCS-3800. MIDI control requires a separately purchased cable and the proper MIDI driver.

Chapter 2

Avid DS Hardware Overview

This chapter provides an overview of the Avid DS hardware included with your Avid DS workstation.

This chapter contains the following sections:

- Back Panel Overview
- Disk Subsystem
- System Inputs and Outputs
- Signal Flow
- House Sync
- Installing and Removing the Avid Fan

Back Panel Overview

The back panel shown in Figure 2 contains an AGP slot and five PCI slots. Only four of these PCI slots are used as expansion slots because the graphics board uses the AGP slot and one PCI slot.

The back panel also contains ports for connecting the mouse, keyboard, monitors, and application key (dongle).

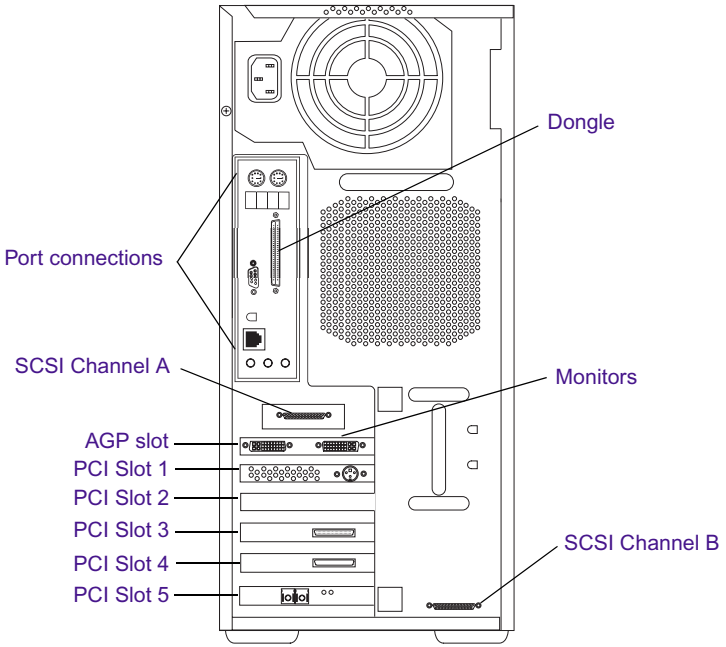


Figure 2 Back Panel Overview

Workstation Boards

Figure 2 shows the location of boards in the expansion slots of a deskside workstation.

Table 6 describes the location and function of each expansion board installed in the workstation. Expansion boards are installed in the workstation's PCI and AGP slots. For details on board specifications and configuration, see the vendor documentation.

Table 6 HP Workstation xw8000 Slot Configurations

Slot	Board Information	Description
AGP slot	ATI FIRE GL X1 256 MB graphics board[a]	Processes input from the Avid Nitris Base board, handles OpenGL® processing, and outputs video signal to workstation monitor(s)
PCI slot 1	Empty	None (space used by ATI FIRE GL X1)
PCI slot 2	Not used	None
PCI slot 3	Avid Nitris Base board	Processes video capture, playback I/O, and hardware effects for the Avid Nitris DNA and routes video to the ATI FIRE GL X1 graphics board
PCI slot 4	Avid Nitris Codec board	Performs the HD compression and 10-bit formats for the Avid Nitris Base board.
PCI slot 5	ATTO™ optical Fibre Channel board when connected to Avid Unity™ MediaNetwork (SD) or local storage (SD or HD)	Processes input and output to the Fibre Channel storage on Avid Unity™ MediaNetwork or local storage.

a. On a rack mount workstation, the AGP slot is to the left, and the PCI slot 5 is to the right when viewing the back of the workstation base unit.

Rear SCSI Connectors

SCSI channels at the rear of the system, A and B, replace the Adaptec™ 39160 SCSI board used in previous Avid DS systems. These channels allow you to use the HD version of Avid DS with Avid MediaDock LVD Avid MediaDock Ultra series, or other Avid DS supported SCSI storage devices.

As drive size and drive speed improve, some Fibre Channel devices and LVD shuttles will be available for use, while some might be discontinued. For more product information contact Avid Sales and Product Information at 800-949-2843.

For more information on a specific expansion board, see the manufacturer's documentation.

Avid Nitris Base Board Connections

The following illustration shows the connections on the Avid Nitris Base board. For information on connecting your video and audio equipment to the Avid Nitris Base board, see "Connecting Peripheral Devices" on page 58.

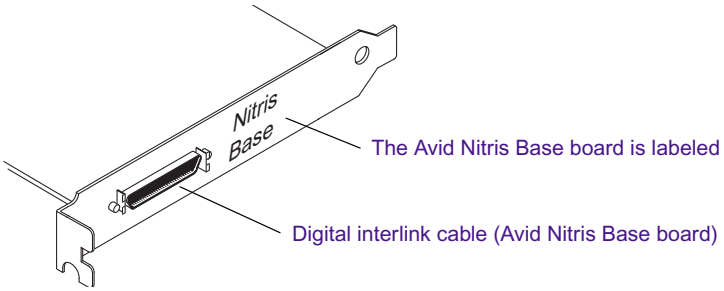


Figure 3 Avid Nitris Base Board Connections

There is a similar connector on the Nitris Codec board which is currently not used. Make sure you connect the digital interlink cable to the board labeled "Nitris Base."

ATTO Optical Fibre Channel Board Connector

Figure 4 shows the connector on the ATTO optical Fibre Channel board. This is the storage adapter included with SD versions of Avid DS that use the Avid Unity MediaNetwork or SD or HD versions of Avid DS that use local storage. For more information on the ATTO board, see the instructions that ship with Avid Unity MediaNetwork.

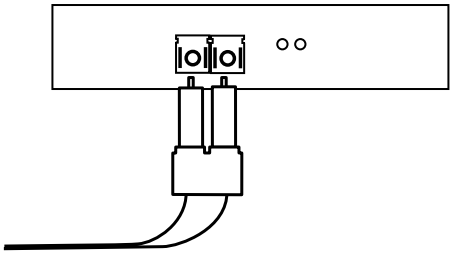


Figure 4 ATTO Fibre Channel Connection

Port Locations

The back panel also contains ports for connecting the mouse, keyboard, and application key (dongle). See Figure 5.

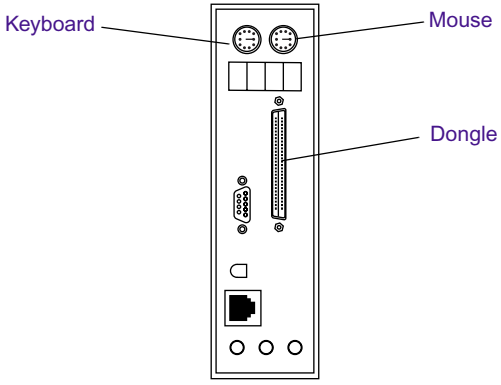


Figure 5 Mouse, Keyboard, and Application Key Connections

Disk Subsystem

In a standard configuration, one Integrated Drive Electronics (IDE) disk drive is installed in the base unit, and eight SCSI disk drives are installed in the Avid MediaDock LVD or 12 SCSI disk drives in a MediaDock Ultra320. The system disk drive is formatted with two partitions for storing operating system files, project files, and audio files. The Avid MediaDock LVD drives are formatted as a striped volume for video file storage.

Disk striping is a hardware capability that speeds up data I/O from disk storage. The workstation divides the data into pieces, and spreads the pieces across the disks in the striped volume. Because the workstation transfers data to multiple drives in smaller chunks than would be transferred to a single drive, the data transfer rate is accelerated.

Table 7 summarizes disk drive information for a standard configuration.

Table 7 Disk Drive Information

Drive	Label	Description	Contents	Format
C	System	A partition of the primary system disk	Operating system software	NTFS
D	Video storage	Local SCSI or local Fibre Channel storage for SD or HD versions	Video files	NTFS
		Avid Unity MediaNetwork	Workspaces	Avid Unity file system
F	Projects	A partition of the primary system disk	Audio and project-related files	NTFS
G	DVD-ROM	—	—	—

System Inputs and Outputs

Table 8 describes the system inputs and outputs. For instructions on connecting peripherals and various video equipment to your workstation, see Chapter 3.

Table 8 System Inputs and Outputs

Input/output	Description
Video Input	HD and SD SDI via BNC connectors SD component via BNC connectors SD composite via BNC connector SD S-Video via an S-Video connector
Video Output	HD and SD SDI via BNC connectors HD and SD component via BNC connectors SD composite via BNC connectors SD S-Video via an S-Video connector
Audio Analog Input	8 analog audio input channels with adjustable gain controls
Audio Analog Output	8 analog audio output channels with adjustable gain controls
Audio Digital I/O	8 AES/EBU digital input and output channels
Optical Digital I/O	ADAT and S/PDIF multichannel optical digital interface (ODI)
USB	Used to interfaces with a USB-to-MIDI converter The MIDI/game port (located on the USB-to-MIDI converter) provides MIDI control of external controllers, such as the JL Cooper MCS-3800. MIDI control requires a separately purchased cable and the proper MIDI driver.
Sync Input	SD sync input via BNC connector HD tri-level sync input via BNC connector
RS-232 Remote	DB-9 connector that connects the RS-232 to RS-422 convertor. Use the supplied cable only
SCSI rear connectors	68-pin connectors for the Avid MediaDock LVD and Avid MediaDock Ultra320 storage systems

Signal Flow

The following sections provide an overview of the signal flow during capture and playback. The Avid DS software controls the process.

Capture Mode

Capture mode lets you use Avid DS to capture video and audio from the VTR.

- The video output of the VTR goes through the Avid Nitris DNA to the Nitris Base board, then to the Nitris Codec board, and from there to the video storage array.
- The video output of the Nitris Base board goes to the graphics board and then to the workstation monitors, where it is displayed as video-in-a-window.
- The control signal from the serial port goes to the VTR to control device operation (the supplied RS-232/RS-422 convertor and cable must be connected to the workstation).
- The sync signal from the house sync goes through the Avid Nitris DNA to the Nitris Base board.

Playback Mode

Playback mode lets you use Avid DS to record video on the VTR.

- The video stored on the video storage array goes through the Nitris Codec board, the Nitris Base board, the Avid Nitris DNA, and then goes to the VTR and video monitor.
- The video output of the Avid Nitris Base board goes to the graphics board and then to the workstation monitors, where it displays as video-in-a-window. It is also sent back to the Avid Nitris DNA for a Client monitor.
- The control signal from the serial port goes to the VTR to control device operation.
- The sync signal from the house sync goes through the Avid Nitris DNA.

House Sync

Whenever you use more than one video device, you must have video synchronization. If the devices are not in sync, a monitor will show rolling, tearing, or incorrect colors in the picture whenever you transfer the video between devices.

A sync generator or house sync provides the synchronizing composite signal to all other devices (video and audio) that must lock to the main video program. This analog composite reference video signal, called “color black” or “black-burst” video, is a timing pulse that is added to a composite video signal and contains horizontal, vertical, and color synchronizing information.

Tri-level Sync

In the case of HD video devices, you need a tri-level sync. Tri-level sync could be considered synonymous to black-burst video in that it is simply the reference synchronizing information from the facility’s master generator.

Each HD format needs a specific tri-level sync. You must use the proper tri-level sync to synchronize your VTR and the Nitris DNA video subsystem for all the HD formats supported by Avid DS.

To make sure the configuration you are using is properly synced, read the documentation that ships with your video subsystem.

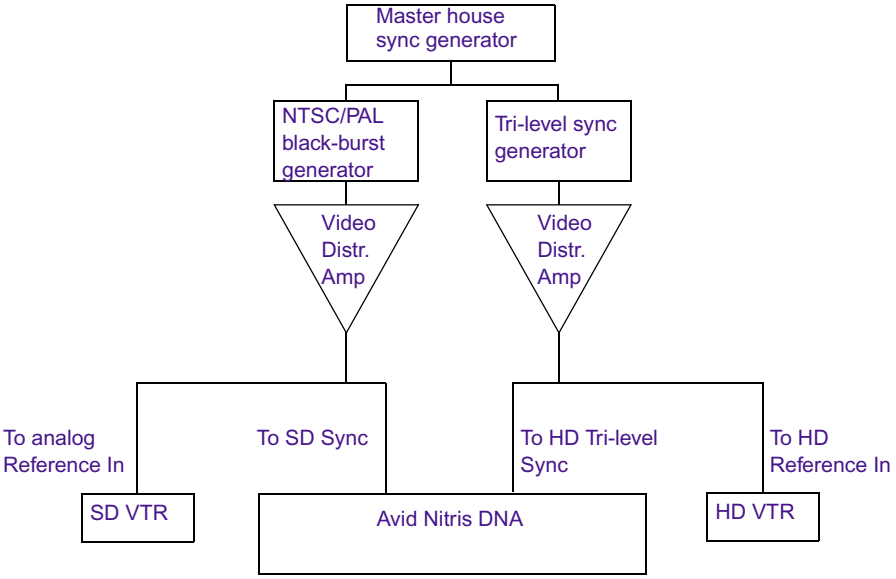
Table 9 shows the HD formats currently supported by Avid DS and their relevant frame rates.

Table 9 HD Formats

HD format	Supported frame rates (fps)
1080i Interlaced	30.00 fps, 29.97 fps, 25.00 fps
1080Psf Progressive	30.00 fps, 29.97 fps, 25.00 fps, 24.00 fps, 23.976 fps
720 Progressive	59.94 fps, 60 fps

Sync Topology

When you sync analog and digital video/audio devices, it is always preferable to feed every component with a separate black-burst or tri-level sync signal in a star pattern. Avoid looping the reference signal, by terminating any unused loop out with a 75 ohm terminator.



A typical star pattern sync topology

You also need to verify the following to make sure your topology is correct:

- **Distance between distribution Amplifier (DA)**: If your DA feeds multiple machines that are far apart, the stability and strength of the signal it sends will be crucial.
- **Quality of the devices**: A good DA in a star pattern topology will be necessary to ensure that every device is properly referenced. A tri-level sync signal could be distributed by an analog video distribution amplifier.
- **Analog video routing switchers**: The Nitris DNA has separate inputs for the SD and HD sync, consider using an analog routing switcher to select between the various tri-level sync signals.

Installing and Removing the Avid Fan

The documentation that ships with the HP Workstation xw8000 system explains how to install optional equipment. However, Avid requires an extra fan in the HP Workstation xw8000 system for cooling the Avid board set. The following procedure describe how to install the fan Avid has added to the HP Workstation xw8000 system. Reverse the procedure for removing the fan.

Before you install or remove the fan, you *must* make sure the system was turned off in a proper manner, the power cord is removed from the rear of the system, and you follow the proper grounding techniques.

To install and remove the fan:

1. Lay the system on its right side.
2. Unlock the left side cover using the keys attached to the rear of the system.
3. Remove the side cover by pulling out the latch to release the cover and removing it from the system.
4. Place the fan into the two slots located at the rear of the system. Make sure that the round SCSI cable is under the higher portion of the fan (see Figure 6).

Figure 6 Placing the Fan Into the System

5. Lower the other end of the fan, pushing it down and towards the rear of the system until you have a pressure fit, carefully watching for the cables on the side of the system (see Figure 7).

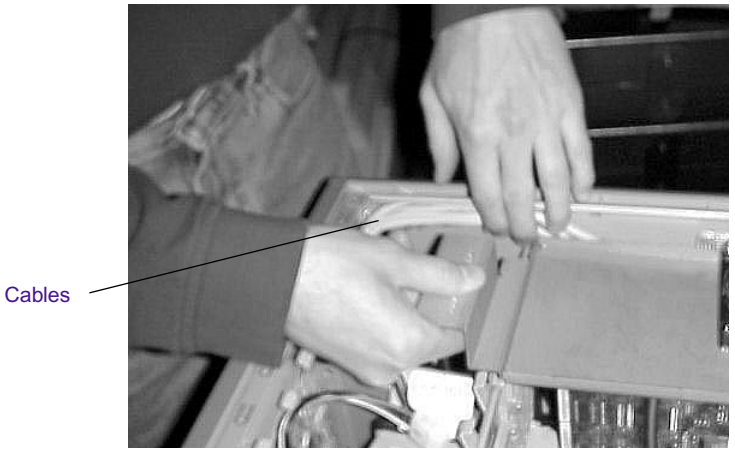


Figure 7 Lowering Fan Into Place

6. Connect the power plug (see Figure 8).

Avid uses one of the power plugs available for internal disks.

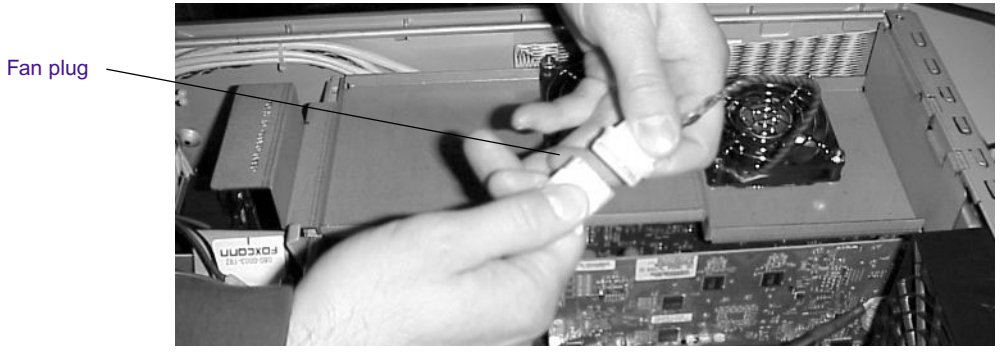


Figure 8 Plugging the Fan

7. Reverse the procedure for removing the fan.

Chapter 3

Assembling the System

This chapter provides the instructions you need to assemble the Avid DS system. This chapter contains the following sections:

- Before Assembling the System
- Connecting the Keyboard, Mouse, and Graphic Tablet
- Connecting the Monitors
- Connecting the Avid Nitris DNA
- Connecting the SCSI Local Storage Systems
- Connecting the Machine Control Cable
- Connecting the USB-to-MIDI Converter
- Connecting Peripheral Devices
- Connecting the Application Key (Dongle)

Before Assembling the System

Before setting up your system, see the Release Notes to make sure that there are no changes, additions, or deletions to the procedures in this chapter.

The required expansion boards are installed and configured for Avid DS. You should not remove or modify these boards.

For detailed instructions on setting up the base unit hardware, see the setup sheet provided with the HP Workstation xw8000. For a rackmount workstation, you must install the base unit into a standard rack before connecting the hardware.

To prevent equipment damage that may be caused by static electricity, do all of the following before making any connections:

- Turn off all devices.
- Always use anti-static prevention.
- Always connect devices to a properly grounded outlet.
- Touch the metal casing of the device before handling the boards.

Connecting the Keyboard, Mouse, and Graphic Tablet

The keyboard and mouse come with attached cables for connecting them to the back panel of your workstation. The Wacom graphic tablet comes with a USB cable. Figure 9 shows the keyboard, mouse, and Wacom tablet connections on a deskside workstation. For more information, see the Wacom documentation.

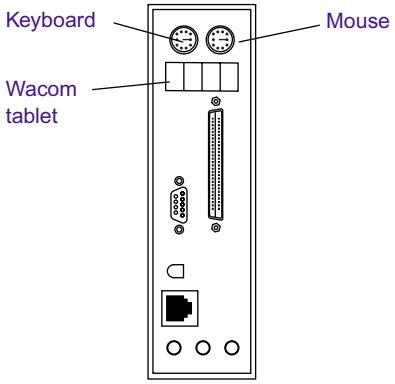


Figure 9 Connecting the Keyboard, Mouse, and Wacom Tablet

To connect the keyboard and mouse:

1. In the base unit, connect the keyboard to the top-left or bottom mini-DIN port.
2. Connect the mouse to the top-right or top mini-DIN port in the base unit.

On a rackmount workstation, the keyboard port is on the bottom when viewing the back of the workstation base unit and the mouse is to the top.

To connect the Wacom tablet:

- Connect the USB cable from the Wacom tablet to one of the USB ports on the back panel of the base unit (the tablet receives power through the USB port). If needed, the Wacom tablet can also plug into one of the front USB ports on the workstation.

Connecting the Monitors

Your workstation comes with two monitors for Avid DS. You can purchase either standard high-resolution flat-panel monitors or VGA monitors. The monitors connect to the ATI FIRE GL X1 board (see Figure 10). The ATI FIRE GL X1 board takes up two slots in the xw8000 system: the AGP slot and PCI slot 1.

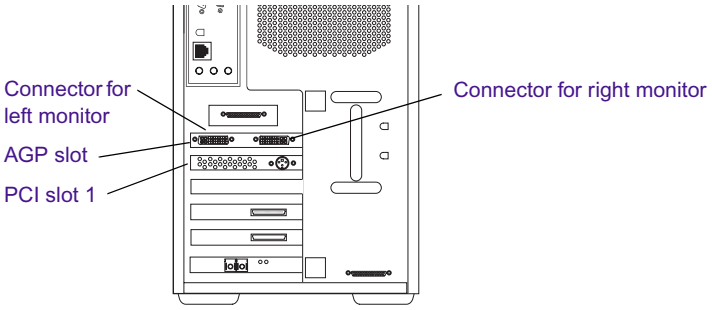


Figure 10 ATI FIRE GL X1 Board Slot Location

On a rackmount workstation, the ATI FIRE GL X1 board is to the left when viewing the back of the workstation base unit.

Each monitor comes with a video cable and a power cable. Depending upon the monitor, you might receive a VGA-to-DVI adapter. Avid recommends that you use the DVI connectors on the monitor if available. For more information regarding the ATI FIRE GL X1 board and monitors, see the documentation.

The driver for the ATI FIRE GL X1 board should be installed on your system, but is also located on the Avid DS Drivers CD-ROM. Unique video property settings and system BIOS are used in your Avid DS Nitris system. For more information consult, your Avid representative.

To connect the monitors:

1. Verify that the power switches on the monitor and the base unit are in the Off position, and then connect these devices to a power source.
2. Attach one end of the cable to the monitor. Use adapter if needed.
3. Attach the other end of the cable to the appropriate DVI connector as shown in Figure 10. Use adapter if needed.

Connecting the Avid Nitris DNA

The Avid DS workstation also includes the Avid Nitris DNA, which provides the high definition and standard definition input and output from your workstation. The front panel of the Nitris DNA has several status LEDs, audio meters, and a power switch.

Avid Nitris DNA Front Panel

Figure 11 and Table 10 show and describe the Avid Nitris DNA LEDs, and power switch.

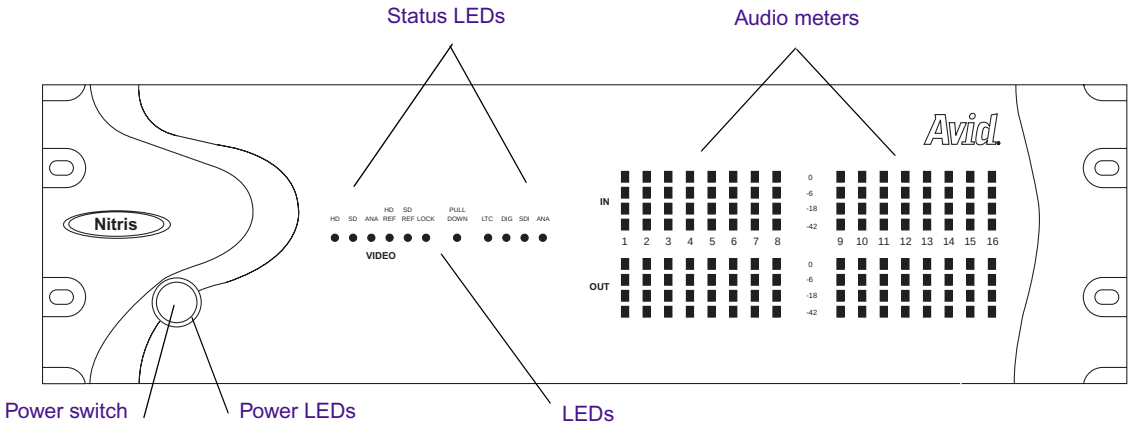


Figure 11 Avid Nitris DNA Front Panel

Table 10 Avid Nitris DNA LEDs

LED	Status When Lit
VIDEO	
HD	The Nitris DNA is in High Definition (HD) mode (as opposed to SD). The light will be illuminated when the system is set to ingest HD source media and the signal is present from the source.
SD	The Nitris DNA is in Standard Definition (SD) mode. The light will be illuminated when the system is set to ingest SD source media and the signal is present from the source.

Table 10 Avid Nitris DNA LEDs (Continued)

LED	Status When Lit
HD REF	Blinks when a High Definition Reference signal is connected and constantly on when the Nitris DNA is locked to the incoming Reference signal.
SD REF	Blinks when a Standard Definition Reference signal is connected and constantly on when the Nitris DNA is locked to the incoming Reference signal.
Lock	The Nitris DNA has a valid house sync input signal and is locked to it (for capture). This LED blinks if it detects a sync signal that is not valid.
AUDIO	
Pull Down	Lit when Pull Down is selected in the application.
LTC	Lit when LTC IN is present on the input to the Nitris DNA.
DIG	Lit when a digital input is selected in the application.
SDI	Lit when a serial digital audio interface input is selected in the application.
ANA	Lit when an analog input is selected in the application.
Power LEDs	LEDs around the power button light when the Nitris DNA is on. Yellow is displayed when no signal is detected from the Nitris Base board. Green is displayed when the Nitris Base board signal is detected.

Nitris DNA Rear Panel

The Nitris DNA rear panel (see Figure 12) contains the following video I/O and audio I/O boards:

- **HD Video I/O board** — Provides HD SDI I/O, HD monitor, HD component, and a HD trilevel sync connections for video equipment.
- **Eight-channel audio I/O board** — Provides two microphone inputs, eight analog I/O channels, two S/PDIF audio I/O channels, eight AES/EBU audio I/O channels, and eight channels of optical ADAT.

- **SD Video I/O board** — Provides analog and digital I/O connections for video equipment, and connects the Avid Nitris DNA to the system using the digital interlink cable. It also provides locations for syncing equipment to the Nitris DNA.

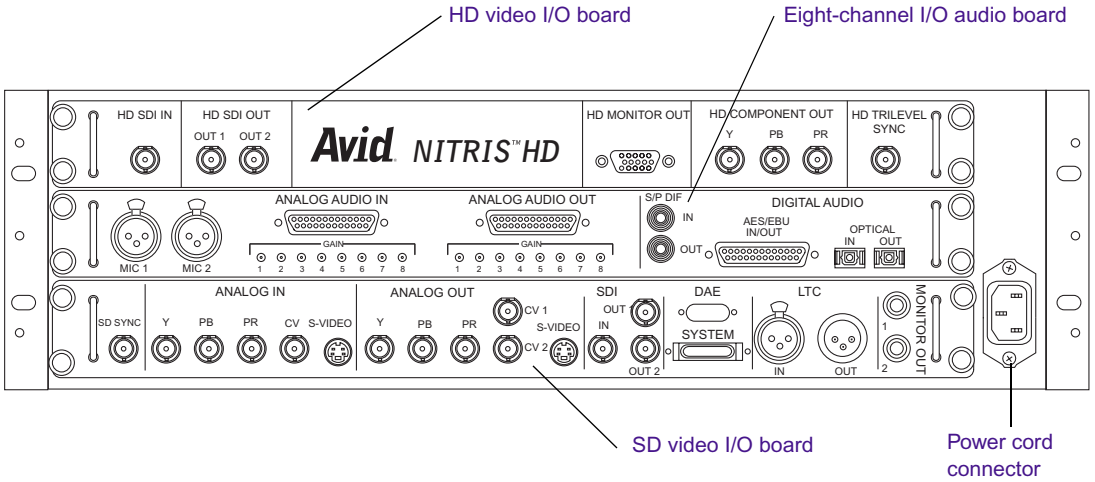


Figure 12 Nitris DNA Rear Panel

If you select a downconvert format, you can output HD playback and SD downconvert simultaneous through the Avid Nitris DNA. As a result, you can monitor SD output or create an SD master at the same time you are outputting an HD master. Some HD media formats are not compatible with SD resized outputs.

The back panel of the Nitris DNA shown in Figure 12 has several connectors that provide the following:

- Digital interlink cable transfers video signal data between the workstation's Avid Nitris Base board and the Avid Nitris DNA
- HD video inputs from a VTR or other device
- HD video outputs to VTRs or monitors
- Standard definition video inputs from a VTR or other device
- Standard definition video outputs to VTRs or monitors

- Two tip/ring/sleeve (TRS) jacks on the SD video I/O board for audio monitoring
- SD sync or HD tri-level sync inputs for the incoming house sync signal
- Monitoring inputs and outputs for composite, component (Y, Pb, and Pr), and S-Video monitors, and SDI

To connect the Avid Nitris DNA to the workstation (see Figure 13):

1. Make sure that the power switch on the Nitris DNA is Off.
2. Attach the power cord to the power connector at the back of the Nitris DNA and plug it into a power outlet.
3. Plug one end of the digital interlink cable into the SYSTEM connector at the back of the Nitris DNA.
4. Plug the other end of the digital interlink cable into the digital interlink connector on the Avid Nitris Base board.
5. Make sure both ends of the cable are secure.

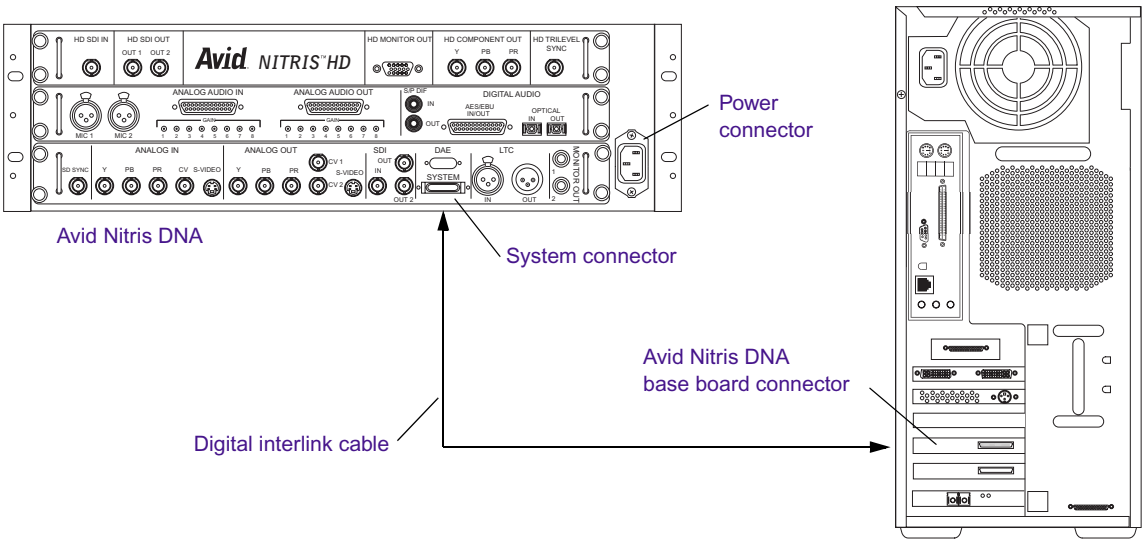


Figure 13 Connecting the Avid Nitris DNA

HD Video I/O Board Connectors

Figure 14 shows the connections on the HD video I/O board. Table 11 describes the function of each connector. You select which inputs to use from the Capture tool when inputting. Use the Output tool to select the outputs.

The HD Monitor and HD Component outputs cannot be used at the same time. Select one of the two in the Output tool.

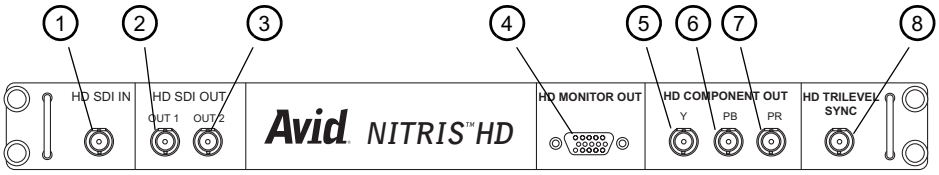


Figure 14 HD Video I/O Board Connectors

Table 11 HD Video I/O Board Identifiers

Number	Label	Function
1	HD SDI IN	High-Definition Serial Digital Interface input, BNC connector.
2	HD SDI OUT 1	High-Definition Serial Digital Interface output number 1, BNC connector.
3	HD SDI OUT 1	High-Definition Serial Digital Interface output number 2, BNC connector.
4	HD MONITOR OUT	High-Definition component analog RGB video signal on a 15-pin connector: compatible with multisync computer monitors.
5	Y, HD COMPONENT OUT	HD analog component video output, Y color difference signal, BNC connector; connects to analog video input of a monitor or waveform /vector.
6	PB, HD COMPONENT OUT	HD analog component video output, PB color difference signal, BNC connector; connects to analog video input of a monitor or waveform /vector.

Table 11 HD Video I/O Board Identifiers (Continued)

Number	Label	Function
7	PR, HD COMPONENT OUT	HD analog component video output, PR color difference signal, BNC connector; connects to analog video input of a monitor or waveform /vector.
8	HD TRILEVEL SYNC	High-Definition video reference input for tri-level sync.

Eight-Channel Audio I/O Board Connectors

Figure 15 shows the connections on the eight-channel audio I/O board. Table 12 describes the function of each connector. You select which audio inputs to use from the Capture tool when inputting.

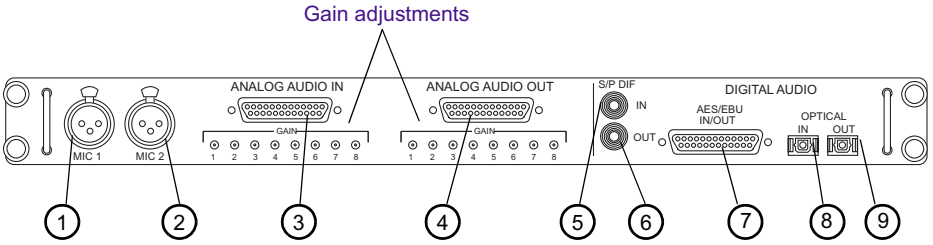


Figure 15 Eight-Channel Audio I/O Board Connectors

Table 12 Eight-Channel Audio I/O Board Identifiers

Number	Label	Function
1	MIC 1	Microphone (MIC) inputs, two female XLR connectors. The analog microphone connectors accept powered or 48 V phantom power microphones. The audio input and microphone are selected in the software.
2	MIC 2	
3	ANALOG IN	Channels 1 - 8 Professional level audio input, 25-pin DSUB connector; a color coded DB25 to XLR cable is provided.
—	Gain	Gain controls for the 8 audio inputs.

Table 12 Eight-Channel Audio I/O Board Identifiers (Continued)

Number	Label	Function
4	ANALOG OUT	Channels 1 - 8 Professional level audio output, 25-pin DSUB connector; a color coded DB25 to XLR cable is provided.
—	Gain	Gain controls for the 8 audio outputs.
5	S/PDIF IN	S/PDIF digital input, white phono (RCA) jack.
6	S/PDIF OUT	S/PDIF digital output, red phono (RCA) jack.
7	AES/EBU IN/OUT	Channels 1 - 8 AES/EBU digital input and output, 25-pin DSUB-connector; a color coded DB25 to XLR cable is provided.
8	ADAT IN	8 optical channels input.
9	ADAT OUT	8 optical channels output.

SD Video I/O Board Connectors

Figure 16 shows the connections on the SD video I/O board. Table 13 describes the function of each connector.

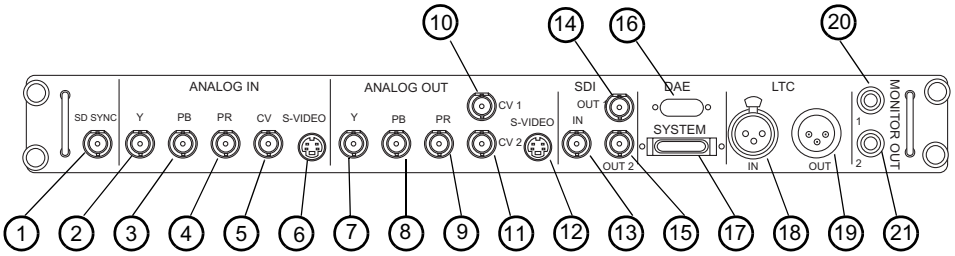


Figure 16 SD Video I/O Board Connectors

All analog video outputs are available during capture and playback to be used as a client monitor.

Table 13 SD Video I/O Board Identifiers

Number	Label	Function
1	SD SYNC	Standard-definition video reference (REF) input for a black burst or house sync signal, BNC connector.
2	Y, ANALOG IN (component)	SD analog component video input, Y luma, BNC connector; connects to the Y video output of decks.
3	PB, ANALOG IN (component)	SD analog component video input, PB color difference signal, BNC connector; connects to the B-Y video output of decks.
4	PR, ANALOG IN (component)	SD analog component video input, PR color difference signal, BNC connector; connects to R-Y video output of decks.
5	CV, ANALOG IN (composite)	Composite video input, BNC connector. Connects to analog video output of decks.
6	S-VIDEO, ANALOG IN	S-Video input, 4-pin connector. Connects to analog video output of decks.
7	Y, ANALOG OUT (component)	SD analog component video output, Y luma, BNC connector; connects to Y video input of decks. The component analog output connectors can also be connected to a monitor or waveform/vector.
8	PB, ANALOG OUT (component)	SD analog component video output, PB color difference signal, BNC connector; connects to B-Y video input of decks. The component analog output connectors can also be connected to a monitor or waveform/vector.
9	PR, ANALOG OUT (component)	SD analog component video output, PR color difference signal, BNC connector; connects to R-Y video input of decks. The component analog output connectors can also be connected to a monitor or waveform/vector.
10	CV 1, ANALOG OUT (composite)	Composite video output, BNC connector. Connects to analog video input of decks or monitor.
11	CV 2, ANALOG OUT (composite)	Composite video output, BNC connector. Connects to analog video input of decks or monitor.

Table 13 SD Video I/O Board Identifiers (Continued)

Number	Label	Function
12	S-VIDEO, ANALOG OUT	Super-video output, 4-pin connector. Connects to analog video input of decks.
13	SDI IN	Serial Digital Interface input, BNC connector.
14	SDI OUT1	Serial Digital Interface output number 1, BNC connector.
15	SDI OUT2	Serial Digital Interface output number 2, BNC connector.
16	DAE	Digital Audio Extraction (DAE) interface, 9-pin DSUB connector. DAE will not be supported in the initial release of the Nitris DNA.
17	SYSTEM	Audio, video, and communication I/O connector from the Avid DS system.
18	LTC IN	Longitudinal timecode input, female connector. Can be used in place of 9-pin deck control when deck control is not required.
19	LTC OUT[a]	Longitudinal timecode output, male connector. Master clock used to stripe tapes and synchronize systems to the house master clock (SMPTE for NTSC, and EBU for PAL).
20 21	Monitor OUT 1 Monitor OUT 2	1/4-inch audio tip/ring/sleeve (TRS) jacks that each output one channel (left/right) of audio to speakers. The audio feeding this connection is from the incoming or outgoing audio. **⚠ This TRS jack provides balanced professional level audio to your speaker system. Do not use 1/4 mono cables in this connector, your output levels might be too high.**

a. Not available for use at this time.

Connecting the SCSI Local Storage Systems

Avid DS supports two standalone, local SCSI storage systems:

- Avid MediaDock LVD
- Avid MediaDock Ultra320

Both of these storage systems connect to the two SCSI channels at the rear of the xw8000 system (see Figure 17) and must be striped to provide the needed throughput. For striping information, see the *Avid DS Installation & Administration Guide*.

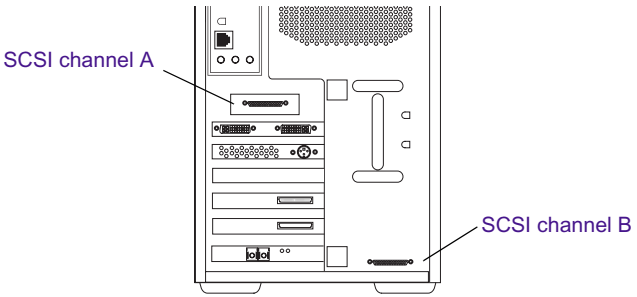


Figure 17 SCSI Connections at the Rear of the System

The connections at the rear of the xw8000 system are HD68-pin connectors. If you are going to use SCSI devices for standalone storage, you must order the cables separately when you order your Avid DS system.

Avid MediaDock LVD

The Avid MediaDock LVD has eight slots for LVD shuttle drives. You can use them in either single-bus or dual-bus configurations. The number of MediaDock LVD enclosures you need depends upon how the devices are configured. Avid DS only supports two configurations for the Avid MediaDock LVD.

- **Single MediaDock LVD** — For a single MediaDock configuration, the Avid MediaDock LVD is used in a dual-bus configuration. In this configuration, the slots are shared between bus A and bus B — for example, the four top slots on SCSI bus channel A and the four bottom slots on SCSI bus channel B. In this configuration you can have a maximum of eight drives, four each on each SCSI bus.
- **Dual MediaDock LVD** — If you need extra storage, you can connect two Avid MediaDock LVD enclosures to your Avid DS workstation. For the two-enclosure configuration, each Avid MediaDock is in a single bus configuration. In this configuration, all eight slots are on one bus in each Avid MediaDock and each MediaDock is connected to a different SCSI channel. In this configuration, you can use a maximum of 16 drives, 8 in each MediaDock located on each SCSI bus.

Avid recommends that you stripe the SCSI drives across both SCSI bus channels. For striping information, see the *Avid DS Installation & Administration Guide*.

For complete installation instructions, see the documentation that ships with the Avid MediaDock LVD.

Do not use the Avid MediaDock LVD Manager software that comes with the MediaDock. This utility is not supported on the Windows XP operating system at the present time and might cause problems with other applications.

Make sure that you do *not* terminate the I/O modules with SCSI terminators. The I/O and ESM modules have internal termination.

At this time, the Avid MediaDock LVD supports 36-GB, 73-GB, and 146-GB drives. You cannot mix drives within an Avid MediaDock LVD enclosure.

Avid typically supports newer drives as they become available. For the latest list of supported drives, see your Avid DS sales representative.

Avid MediaDock Ultra320

The Avid MediaDock Ultra320 enclosure has 12 slots for the shuttle drives. The Avid MediaDock Ultra320 can be configured in either a single-bus or a dual-bus configurations. Avid DS supports both configurations.

Avid recommends that you stripe the SCSI drives across both SCSI bus channels. For striping information see the *Avid DS Installation & Administration Guide*.

The Avid MediaDock Ultra320 has the capability of using a minimum of 8 and a maximum of 12 SCSI drives in the Avid DS configuration. At this time Avid DS supports the following two configurations of the Avid MediaDock Ultra320:

- **Single enclosure**—using Avid MediaDock Ultra320 enclosure in the dual-bus configuration. The dual-bus configuration is half the drives attached to SCSI channel A and the other half connected to SCSI channel B.
- **Dual enclosures**—one Avid MediaDock Ultra320 enclosure attached to each SCSI channel.

For installation procedures and special instructions on switching between single and dual modes, see the documentation that ships with the Avid MediaDock Ultra320.

The Avid MediaDock Ultra320 enclosure can be used in a dual-bus configuration. In this configuration, the slots are shared between SCSI bus channel A and SCSI bus channel B. For example, six drives are connected to SCSI bus channel A and the remaining six drives are connected to SCSI bus channel B. In this configuration, you can have a maximum of 12 drives, 6 each on each SCSI bus.

Avid typically supports newer drives as they become available. For the latest list of supported drives, see your Avid DS sales representative.

Connecting the Fibre Channel Local Storage

Avid DS supports the MEDIArray II Fibre Channel storage system (MEDIArray II) for use with HD or SD local storage. The MEDIArray II connects to an optional ATTO 3300 optical Fibre Channel board located in PCI slot 5 of the xw8000 system (see Figure 18).

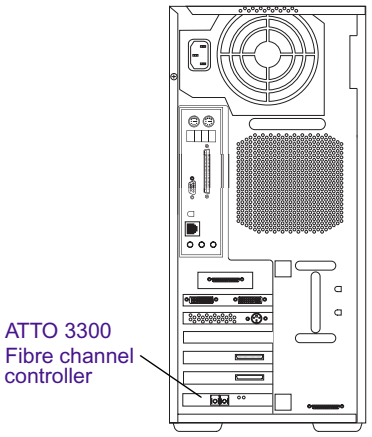


Figure 18 ATTO 3300 Fibre Channel Board Slot Location

The MEDIArray II holds 14 Fibre Channel drives in slot 0 to slot 13. Avid supports a minimum of three configurations of the MEDIArray II:

- **Single enclosure** — using 73-Gb or 146-GB drives (you can not mix different drive sizes within the same enclosure)
- **Dual enclosure** — using 146-GB drives only
- **Six enclosure** — using 146-GB drives only

The Fibre Channel drives are designed specifically for the MEDIArray II enclosure and are not interchangeable with any other enclosure.

For complete installation instructions, see the documentation that ships with the MEDIArray II.

Avid typically supports newer drives as they become available. For the latest list of supported storage drives and enclosure, see your Avid DS sales representative.

Avid Unity MediaNetwork

Avid Unity MediaNetwork is the facility-class media network for content creators that lets you share a single storage between multiple workstations. You cannot use Avid Unity MediaNetwork and local Fibre Channel storage in the same system, because Avid Unity MediaNetwork uses the same optional ATTO 3300 fibre channel board installed in your Avid DS workstation in PCI slot 5 to connect to MediaNetwork (see Figure 18).

Set up and installation instructions for the Avid Unity MediaNetwork ship with the Avid Unity MediaNetwork hardware. A specific driver for the Fibre Channel board might be needed for Avid Unity MediaNetwork. Make sure you read all of the instructions that ship with the equipment. For information on configuring the Avid DS software for use with the Avid Unity MediaNetwork, see the *Avid DS Installation & Administration Guide* and your Avid Unity documentation.

Connecting the Machine Control Cable

A machine control cable kit is included with the system. It includes the dataMate DM7015 or Rosetta Stone adapter (see Figure 19), a 3-foot (.92-meter) RS-232 cable, and a 10-foot (3.05-meter) RS-422 cable. The adapter converts an RS-232 signal to an RS-422 signal to control a VTR from your Avid DS workstation. The 10-foot cable is a 9-pin male-to-male data cable. The 3-foot cable is a 9-pin male-to-female data cable.

The adapters include two diagnostic LEDs (power and data). The power LED glows steadily when the adapter is receiving adequate power through the serial port. The data LED flashes whenever data is being transmitted or received. This helps you confirm that the serial port is active.

Figure 19 dataMate Adapter

To assemble the machine control cable

1. Attach the RS-232 cable end of the adapter to the RS-232 connector on the PC.
2. Attach the RS-422 cable end of the adapter to the RS-422 connector on the VTR.

The adapter label shows the proper orientation.

Connecting the USB-to-MIDI Converter

If you are using a JL Cooper controller in an HP Workstation xw8000 system you must install a USB-to-MIDI converter (see Figure 20). The MIDISPORT 2x2 by M-AUDIO has been tested with the Avid DS system. You need a USB cable that connects to a USB port on the Avid DS system. Only connect the USB-to-MIDI converter if you are going to use it.

Before you use the USB-to-MIDI converter, you must install the latest revision of the driver. Go to www.midiman.net and install the latest revision for the MIDISPORT 2x2.

Figure 20 USB-to-MIDI Converter

To connect the USB-to-MIDI converter to a port on the system

1. Locate the MIDI converter USB cable.
2. Connect the device connector of the USB cable to the device connector at the rear of the USB-to-MIDI converter.
3. Connect the USB connector of the USB cable to a USB port at the rear of the PC.
4. Press In the USB/MIDI Thru button, at the front of the USB-to-MIDI converter, to allow the device to act as a USB-to-MIDI converter.

Connecting Peripheral Devices

Peripheral devices, such as VTRs and DATs, connected to your workstation allow you to capture and output video/audio material. You can control this equipment remotely with Avid DS.

Video Connections

You can connect HD VTRs and video monitors to your workstation. Although Avid recommends you use a house sync, Avid DS can capture and output by using an internal sync signal generated by the Avid Nitris DNA.

The following procedures and illustrations explain each of these variations. For more information, see the documentation that comes with your peripheral devices.

To connect video devices (see Figure 21):

1. Connect the HD In on the Avid Nitris DNA to the HD Out on the VTR.
2. Connect one of the HD Outs, on the Avid Nitris DNA to the HD In on the VTR.
3. Connect the other HD Out on the Avid Nitris DNA to the HD In on the video monitor.
4. Set the VTR transport switch to Remote.
5. Plug the RS-232 end of your machine control cable into the serial port on your workstation.
6. Plug the other end of the cable into the REMOTE IN port on the VTR.

You should not substitute any other cable for the machine control cable. The supplied machine control cable is an RS-232 to RS-422 converter.

7. Plug one end of a BNC sync cable into the Avid Nitris DNA's SD sync or HD tri-level input and the other into the house sync.

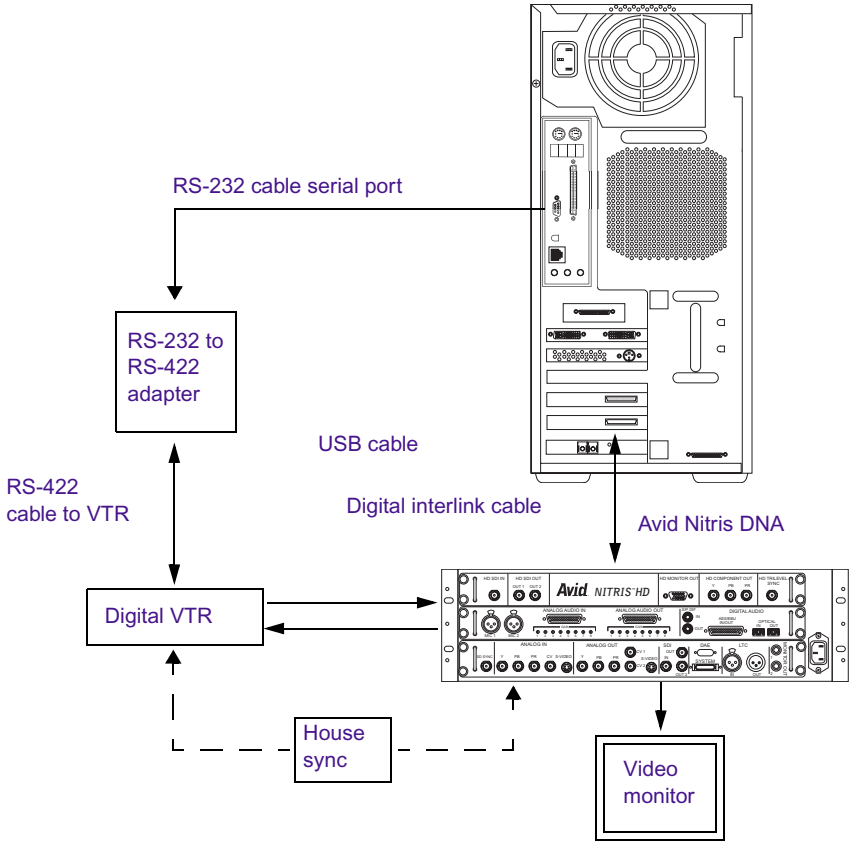


Figure 21 Connecting Video Devices

Audio Connections

Avid provides three audio cable harnesses with the Avid Nitris DNA. Each cable is color coded and labeled for Avid Nitris DNA connections. The cables are identified as follow:

- Line In Balanced (blue)
- Line Out Balanced (red)
- AES/EBU I/O (yellow)

Each cable is similar in appearance using a DB-25 connector on one end, and eight industry-standard XLR audio connectors on the other end (see Figure 22).

Avid audio I/O cables provided with the Nitris DNA

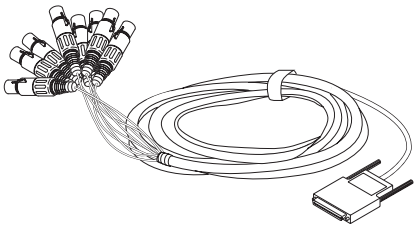


Figure 22 Audio Input and Output Cable

The connections between the Nitris DNA and VTR vary depending on the type of audio equipment and VTR you have. Figure 23 identifies the connections for your audio equipment. See "Eight-Channel Audio I/O Board Connectors" on page 48 for exact connector locations.

Two microphone inputs are also provided on the Eight-Channel Audio I/O board.

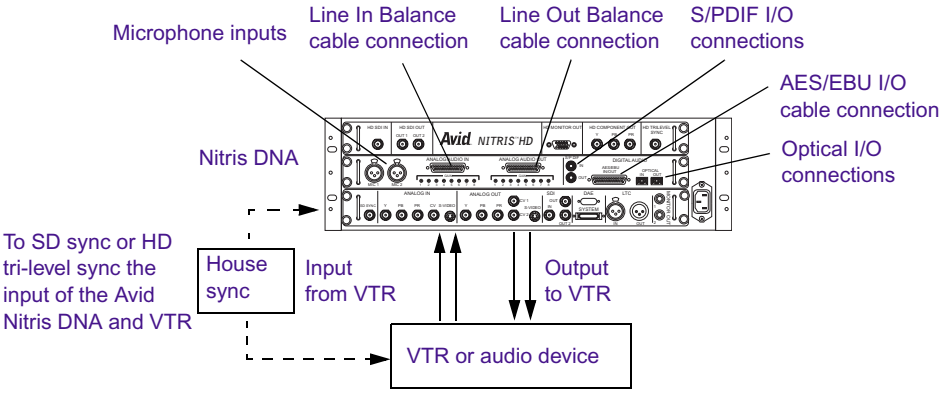

Microphone inputs
Line In Balance cable connection
Line Out Balance cable connection
S/PDIF I/O connections
AES/EBU I/O cable connection
Optical I/O connections
Nitris DNA
Avid NITRIS HD
To SD sync or HD tri-level sync the input of the Avid Nitris DNA and VTR
House sync
Input from VTR
Output to VTR
VTR or audio device

Figure 23 Audio Input and Output Connections

To connect your audio equipment:

1. Make sure that the power switch on the Nitris DNA is Off.
2. Connect the audio output ports on the Nitris DNA to the input ports on the VTR or audio device.
3. Connect the audio input ports on the Nitris DNA to the output ports on the VTR or audio device.

The Nitris DNA provides two balanced ¼-inch audio TRS jacks for monitoring your audio. The Monitor Out jacks are on the SD Video I/O board. When you play a sequence, the audio tracks are mixed down to stereo when heard through the monitor speakers (see Figure 24).

These TRS jacks provide balanced professional level audio to your speaker system. Do not use 1/4 mono cables in this connector, your output levels might be too high.

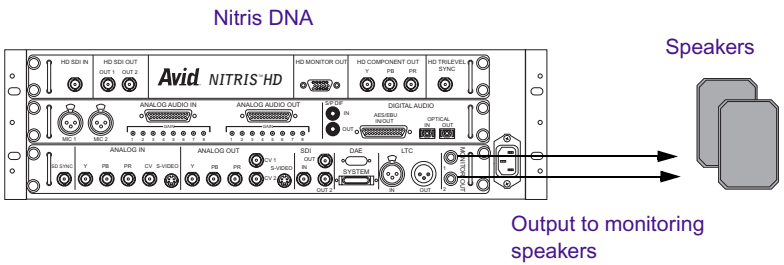


Figure 24 Audio Monitoring Connection

Connecting the Application Key (Dongle)

The software application key (dongle) provides copy protection for the software that is installed on the parallel port of your workstation (see Figure 25). Avid DS will not start unless the dongle identification number matches the information in the license file on your workstation's hard drive.

The parallel port dongle does not require batteries because it receives power from the system's parallel port. Before you attach the dongle, verify that the parallel port is active.

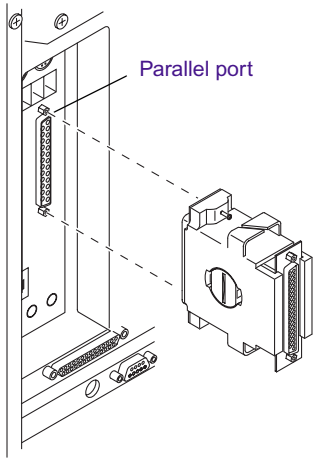


Figure 25 Parallel Port Location

Your workstation is delivered with a license file already on the hard drive. This license file was used for testing before shipment. Your Avid DS reseller will provide a valid license file for your dongle. For more information, see the *Avid DS Installation & Administration Guide*.

To install the application key (dongle):

1. Attach the dongle to the parallel (LPT1) port on the back of the workstation.
2. Start the workstation and log in as an **Administrator**.
3. Right-click My Computer and select **Device Manager**.
4. Select **Ports (COM & LPT)** and select **ECP Printer Port (LPT1)**.
5. Right-click in ECP Printer Port (LPT1) and select **Properties**.
6. Click the General tab and verify that the Device Status says "This device is working properly." If not, go to step 7.
7. Close the dialog box, right-click ECP Printer Port (LPT1), and select **Enable**.

Chapter 4

Rack Mounting the Avid Nitris DNA Enclosure

This section provides the information for mounting the Avid Nitris DNA in a 19-inch (483-mm) National Electrical Manufacturers Association (NEMA) or Electronics Industries Association (EIA) rack. Avid recommends that you mount your Avid Nitris DNA in a rack before you connect any cables.

If you need to rack mount the HP Workstation xw8000 system, a rack-mount kit is available from HP. Installation instructions are included with the kit. The HP Workstation xw8000 system requires 5 rack units.

This section contains the following sections:

- Equipment Environmental and Safety Guidelines
- Installing the Avid Nitris DNA in a Rack

Equipment Environmental and Safety Guidelines

When you install the Avid Nitris DNA in a rack, you must take the following precautions:

- **Elevated Operating Ambient Temperature** — When the Avid Nitris DNA is installed in a closed or multiunit rack assembly, the operating ambient temperature of the rack environment might be greater than the room ambient temperature. Therefore, consider installing the equipment compatible with the manufacturer's maximum ambient temperature of 104°F (40°C).
- **Reduced Airflow** — Do not compromise the amount of airflow required for safe operation of the equipment.
- **Mechanical Loading** — Avoid a hazardous condition due to an uneven mechanical loading.
- **Circuit Overloading** — Consider connecting the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Use appropriate equipment nameplate ratings.
- **Reliable Earthing** — Maintain reliable earthing of rack-mount equipment. Give particular attention to supply connections other than direct connections to the branch circuit (for example, the use of power strips).

Installing the Avid Nitris DNA in a Rack

The Avid Nitris DNA is designed for 19-inch (483-mm) rack enclosures and requires three EIA rack units (3U), or 5 ¼ inches (133.4 mm) of rack space. The Avid Nitris DNA provides rack nuts for those rack enclosures that do not have threaded holes. Rack-nut clips position the rack nuts at the holes of the rack and are used to secure the rack components in place.

To ensure the stability of the rack enclosure, start from the bottom when you install the rack components in the rack enclosure.

Attaching the Rack Nuts to the Rack

Install the rack nuts where the Avid Nitris DNA front panel will secure to the rack enclosure.

To attach the rack nuts to the rack enclosure:

1. Select the lowest position in the rack where you can mount the Avid Nitris DNA. Position the support rails so the bottom of each rail is at the baseline of a U-alignment position (see Figure 26).

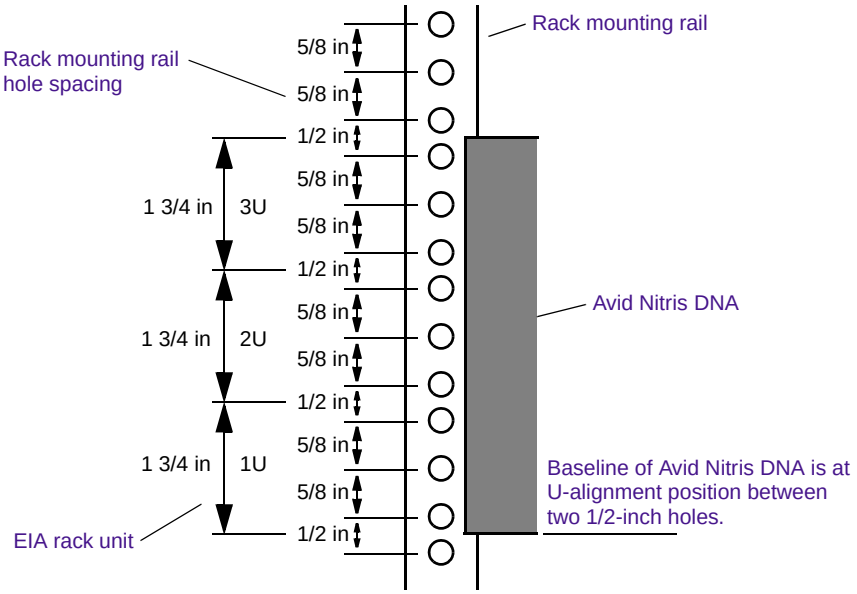


Figure 26 Positioning the Avid Nitris DNA

2. From the inside of the enclosure rail, slide the rack-nut clip over the hole you want to use (see Figure 27). If your rack enclosure has threaded holes, continue with step 4.
3. Attach a rack-nut clip for each front and rear hole in the support rails. Each front support rail needs 3 rack-nut clips.

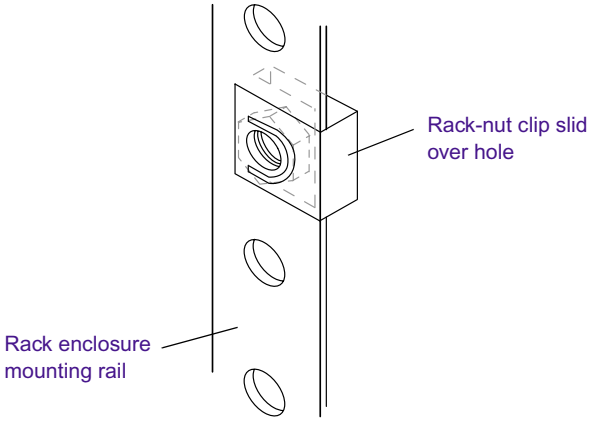


Figure 27 Attaching Rack Nuts onto the Rack Enclosure

Securing the Avid Nitris DNA in a Rack

The Avid Nitris DNA is secured in the front mounting rails of the rack with four rackmount screws. If your rack has threaded holes, you might have your own rack screws. If your rack does not have threaded holes, install the rack nuts included with the Avid Nitris DNA (see "Attaching the Rack Nuts to the Rack" on page 65).

You should have someone helping you to lift the Avid Nitris DNA enclosure.

To secure the Avid Nitris DNA into the rack.

1. From the front of the rack, position the Avid Nitris DNA so that it is flush against the front mounting rails (see Figure 28).

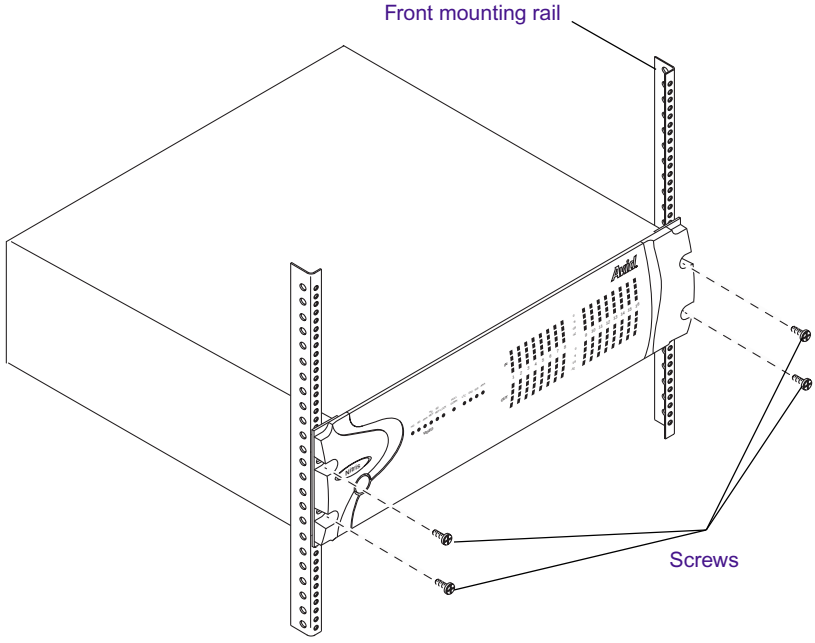


Figure 28 Installing an Avid Nitris DNA

2. Align the holes in the Avid Nitris DNA with the holes in the front mounting rail. From the front of the rack enclosure, insert the screws through the Avid Nitris DNA and front mounting rail, and tighten.

Appendix A

Regulatory and Safety Notices

Warnings and Cautions

Never install equipment if it appears damaged.

Disconnect the power cord before servicing unit.

Only perform the services explicitly described in this document. For services or procedures not outlined in this document, speak with authorized Avid service personnel.

“CLASS 1 LED PRODUCT”

Follow all warnings and cautions in the procedures.

Operate the device within its marked electrical ratings and product usage instructions.

FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canadian ICES-003

This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice

Declaration of Conformity
(According to ISO/IEC Guide 22 and EN 45014)

Application of Council Directives:	73/23/EEC, 89/336/EEC.
Standards to which Conformity is Declared:	EN60950:1999 Third Edition CISPR 22:1997 / EN55022:1994 + A1:1995 + A2:1997 Class A EN55024:1998/EN61000 — 3-2, 4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11
Manufacturer's Name:	Avid Technology, Inc. 1925 Andover Street Tewksbury, MA 01876, USA
European Contact:	Nearest Avid Sales and Service Office or Avid Technology International B.V. Sandyford Business Center Unit 3, Dublin 18, Ireland
Type of Equipment:	Information Technology Equipment

Product Name:	Products for the Windows NT, Windows 2000, or Windows XP Operating System: Avid Adrenaline DNA, Avid Nitris DNA, Avid Equinox Break-Out-Box, Avid DS, Avid Xpress, Avid Xpress DV, Film Composer, Media Composer, MediaDock 2+, MediaDock LVD, MediaDrive, MediaRAID, MEDIArray, MEDIArray Drive, MEDIArray II, MEDIArray II Drive, Meridien I/O box, NewsCutter, NewsCutter DV, NewsCutter XP, Symphony Products for the Mac OS X Operating System: Avid Adrenaline DNA, Avid Xpress, Avid Xpress DV, Film Composer, Media Composer, MediaDock 2+, MediaDock LVD, MediaDrive, MediaRAID, MEDIArray, MEDIArray Drive, MEDIArray II, MEDIArray II Drive, Meridien I/O box, Symphony Products for the UNIX Operating System: AirPlay, VideoSPACE Products for MediaNetwork and Workgroups: Avid ProEncode, Avid Unity MediaManager, Avid Unity MediaNetwork, Avid Unity TransferManager, LANserver, LANserver EX, MEDIArray, MEDIArray Drive, MEDIArray II, MEDIArray II Drive, Nearchive, PortServer, Xdeck
Base Model Numbers:	None
Product Options:	All
Year of Manufacture:	2003

(1) Products for the Windows NT, Windows 2000, or Windows XP Operating System: products were tested in a typical Avid Adrenaline DNA, Avid Nitris DNA, Avid Equinox Break-Out-Box, Avid DS, Avid Xpress, Avid Xpress DV, Film Composer, Media Composer, MediaDock 2+, MediaDock LVD, MediaDrive, MediaRAID, MEDIArray, MEDIArray Drive, MEDIArray II, MEDIArray II Drive, Meridien I/O box, NewsCutter, NewsCutter DV, NewsCutter XP, or Symphony configuration.

(2) Products for the Mac OS X Operating System: products were tested in a typical Avid Adrenaline DNA, Avid Xpress, Avid Xpress DV, Film Composer, Media Composer, MediaDock 2+, MediaDock LVD, MediaDrive, MediaRAID, MEDIArray, MEDIArray Drive, MEDIArray II, MEDIArray II Drive, Meridien I/O box, or Symphony configuration.

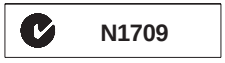
(3) Products for the UNIX Operating System: products were tested in an AirPlay or VideoSPACE configuration.

(4) Products for MediaNetwork and Workgroups: products were tested in a typical Avid ProEncode, Avid Unity MediaManager, Avid Unity MediaNetwork, Avid Unity TransferManager, LANserver, LANserver EX, MEDIArray, MEDIArray Drive, MEDIArray II, MEDIArray II Drive, Nearchive, PortServer, or Xdeck configuration.

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directives and Standards.

George R. Smith, Director of Hardware Engineering

Australia and New Zealand EMC Regulations



John Kells, Australian Operations Manager
Avid Technology (Australia)
Unit B
5 Skyline Place
French Forest NSW 2086
Australia
Phone: 61-2-8977-4800

Taiwan EMC Regulations

Taiwan EMC Regulations BSMI Class A EMC Warning

警告使用者:

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Index

A

AES/EBU connection 44
Analog connectors 50
application key (dongle), attaching 61
attaching application key 61
ATTO board connections 31
audio
  connections 59
  LEDs 44
Australia EMC regulations 73
Avid Nitris DNA
  base board connections 30
  connecting 43, 46
  front panel 43
  installing in rack 67
  PCI 30
  rear panel 44

B

back panel, workstation 28
board
  ATTO board connections 31
  audio I/O board connectors 48
  Avid Nitris board connections 30
  eight-channel audio I/O 44
  HD video I/O 44, 47
  SD video I/O 45, 49
  signal flow, capture/playback 34
  workstation 29

C

cables 46
  machine control 56
Canadian interference causing equipment regulations 70
capture, signal flow 34
cautions 69
computer monitors, connecting 42
connecting hardware 41
  audio devices 59
  Avid Nitris DNA 46
  computer monitors 42
  keyboard 41
  monitors 42
  mouse 41
  peripheral devices 58
  tablet 41
  video devices 58
  WACOM tablet 41
connector
  analog 50
  ATTO 31
  audio I/O 48
  HD video I/O 47
  LTC 51

SD video I/O 49
SDI 51
S-video 51
sync 50
contents, Avid DS system
documentation 19
hardware 17
package contents 17
software 18

D

devices
audio, connecting 59
peripheral, connecting 58
dimensions
hardware 24
documentation 19
dongle (application key)
attaching 61
Drives 32

E

EIA rack units 64
eight-channel audio I/O board
connectors 48
identifying 44
electrical requirements 22
specifications 22
environmental requirements 21
European Union notice 71

F

fan, removing and installing 37
FCC notice 70
Fibre Channel local storage 55

G

graphic tablet, connecting 41
graphics board 42

H

hardware 17
dimensions 24
specifications 24
hardware, connecting 41
computer monitors 42
keyboard 41
monitors 42
mouse 41
tablet 41
Wacom tablet 41
HD trilevel sync 44
HD video I/O board 44, 47
house sync 25

I

input and outputs, system 33
installing
Avid Nitris DNA in a rack 64
the fan 37

K

key, software protection 61
keyboard, connecting 41

L

LEDs 43
license file 62
LTC connector 51

M

machine control cable 56
MediaDock LVD 32, 52
MediaDock Ultra320 52, 54
MediaNetwork 56
MEDIArray II 55
Monitor Out speakers 61
monitors, connecting 42, 42
mouse, connecting 41

N

New Zealand EMC regulations 73

O

optical ADAT 44
output simultaneously 45
outputs and inputs, system 33

P

package contents
  documentation 19
  hardware 17
  software 18
peripherals devices 58
planning, site 21–24
  electrical requirements 22
  environmental requirements 21
  space requirements 23
playback, signal flow 34
port locations 31
power switch 43

R

rack-mount
  installation 64
  positioning 65
  rack nuts 65
  securing the Avid Nitris DNA in 66
regulatory information 70
removing the fan 37, 37
requirements 21–24
  electrical 22
  environmental 21
  space 23

S

safety information 70
SCSI storage systems 52
SD video I/O board 49
SDI connector 51
signal flow 34
  capture 34
  playback 34
simultaneous output 45
site planning requirements 21–24
  electrical 22
  environmental 21
  space 23
software 18
space requirements 23
Speakers 61
specifications
  electrical 22
  hardware 24
storage
  MediaDock LVD 52
  MediaDock Ultra320 52, 54
S-video connector 51
sync
  connector 50

house 35
output 46
topology 36
system contents 17
documentation 19
hardware 17
software 18
system inputs/outputs 33
system requirements 21–24
electrical 22
environmental 21
space 23

T

tablet, connecting 41
Taiwan EMC regulations 74

U

Unity
See Avid Unity MediaNetwork 56
USB-to-MIDI converter 57

V

video devices, connecting 58
video LEDs 43

W

Wacom tablet, connecting 41
warnings 69
workstation
back panel overview 28
boards 29, 34
port locations 31